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Understanding the Temporal in Economics

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Studies by the English economist John Maynard Keynes himself and a number of his professional successors - and not least Victoria Chick - leave no doubt that the concept of time should be of central importance in economic analysis. It is also indisputable that in the sense of one of Keynes' old teachers, the philosopher of the time, McTaggart, it is the A-series with past, present and future that is the focus and not only the B-series with before, now and after. This raises the interesting epistemological problem of being able to distinguish between past, present and future, and how theory formation and methodology should be handled.

Key words: Time, J.M. Keynes, McTaggart, Victoria Chick,

Introduction

In John Maynard Keynes' own work with time, there are contributions to be found already from his study of time, both in lecture notes and his unpublished lecture manuscript "Time" from 1903. He has been so close to the time philosopher McTaggart that his concept of time has become part of Keynes' understanding, both in terms of time, as something that has to do with change and at the same time the need to distinguish between past, present and future.

How Keynes (1938) subsequently handles this is made very clear in a letter to Harrod in which he states that economics is a science where one must think in models and where the art consists in choosing models that are relevant to the contemporary world. This is necessary because the material available - unlike natural science - is not homogeneous over time. The purpose of a model is to distinguish the semi-permanent or relatively constant factors from those that are transient or

[1] This article is inspired by a speech I gave to Victoria Chick on her 80th birthday at University College London, Gustave Tuck Lecture Theatre, July 11, 2016.

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oscillating, allowing to develop a logical way of thinking and understanding the time sequences that they may give rise to.

Keynesian theory is thus characterized by adding a new aspect of economic thinking around time, which is done through the explicit inclusion of the approach that lies in MacTaggart's (1908) A-series. This gives rise to focus on Keynes' approach to analysis with changing equilibria, as well as on the ideas of working with continuation theory.

This McTaggart division of life's temporal relation has since manifested itself in two schools - the dynamic conception of time based on the A-series and its tensed theory of time and the static conception of time based on the B-series and a tenseless theory of time. If the language one uses allows for changes in tenses, it is the same as positions in McTaggarts A-series. And theories described, using such language should be an explicit part of Post-Keynesian theory. B-series give a different analysis without tensed facts and this is the kind of analysis which is normally presented in mainstream economics. An economic theory that does not make use of the A-series cannot explore an economy in motion. Focus on B-series alone ends up as a static theory.

It may seem paradoxical that relatively little has been said about general requirements for explicit management of time in economics. And thus, what it means if McTaggart's A series of past, present and future is to be integrated into economic theory. There is no doubt that it is more complicated than if only one understanding of time is used using the simple B-series with before and after and where only a mechanical model is involved. This is known from, for example the IS-LM or multiplier-accelerator models. Analyzes that, in an empirical sense, become ex-post studies.

Fortunately, there are attempts to think economics including time in McTaggart's sense and in the following especially some attempts to introduce McTaggart's A-Series into economic theory will be presented.

Frontrunners

An interesting interpretation of Keynes' method is Shackle's (1974) edition in the form of Keynesian Kaleidics. This stems from Shackle's three main interests, namely time, expectations and uncertainty and thus also Chapter 12 of Keynes' (1936) General Theory. He introduces the present as a moment-in-being and following Keynes' letter to Harrod, one could say that Shackle is also approaching a form of analysis in which one can not only view the world as a panorama but must be present in the present. Therefore, he believes that a panorama outside-view should be contrasted with an inside-view. The latter situation is one in which an economist, on the basis of his knowledge, thoughts and ideas, decides in Keynes' sense which model to use.

Keynesian Kaleidics is a difficult methodology but illustrates quite well how changing a single relationship in an economy can lead to a dramatic change in the overall picture of an economy.

The kaleidic factor is uncertainty, which excludes symmetry between explanation and prediction. Thus, it is not possible to make deterministic predictions. In turn, there is room for imagination to play a role in setting up scenarios.

Hicks (1976), like Shackle, has had a lifelong job of bringing economic theory closer to reality - they have both been preoccupied with Keynes' concept of expectation in General Theory since the beginning of their careers. The path for Hicks is quite interesting because it is not so direct, and it takes time before he seriously recognizes the limitations of general equilibrium theory and in his own IS-LM diagram. On the other hand, he gradually becomes quite explicit about the concept of time and notes that unlike science and in harmony with Joan Robinson (1953), time in the social sciences must be perceived as irreversible and like Keynes he states that the facts worked with in economics are not permanent. This leads him into the work of three types of causalities, where he prefers sequential causality (Hicks, 1980).

Thus, Hicks approaches the possibility of studying dynamic processes by not only wanting to study a period, but the connection between several periods. This is the theme of Continuation Theory, which allows the study of effects on economic processes of changing expectations.

Sometimes Post-Keynesians provide a quite uncritical reference to Path Dependence in dealing with time and the past. Admittedly, Path Dependence can be taken as an expression of both hysteresis, cumulative causality or technological lock-in, but it also illustrates the problem, namely how far can one go in letting past events determine conditions that will happen in the future? The simple and traditional version in the form of Qwerty-nomics holds no viable path for economics. On the other hand, the learning from other social sciences' use of Path Dependence could make the concept more relevant to economics (Madsen, 2016).

The concept of Path Dependence is weak because it is neither a clear theory, an explicit method nor empirically conclusively proven. And the question is, how much any paths that are identified as generalizable when history never repeats itself? A move away from Querty-nomics towards a new and reformulated Path Dependence provides an opportunity to leave functional explanations of historical development to take intentional explanations into use.

This calls for studies of social mechanisms in the form of institutional changes. This may involve a showdown with, for example, traditional regression analysis. Instead, there is a need for studies of causal complexities such as tipping points, higher-order interaction effects, strategic interaction, two-way causality, or feedback loops that require new forms of process detection and systematic case studies to address Path Dependence issues. There needs to be more room for case-study methods that shed light on how causal mechanisms work in a context, but also detection of rare events and "omitted variables".

The explicit insights of these authors have some implications for how time is to be handled in economics. This will be summarized in the last section.

Victoria Chick

Professor Victoria Chick has an interesting approach to the sense of time. She has explicitly formulated herself about time in many of her contributions and not least based on her book "Macroeconomics after Keynes" (1983). Time is the key to understanding Keynes, and Chick sees his general theory as a static model for a dynamic process.

Why then is time so important?

Primarily it is easy to see that it's just one of the crucial areas where the Post-Keynesian theory stands out in direct continuation of Keynes and demonstrates that the relationship between economics and reality should be taken seriously.

And secondly there is another good reason. As stated by Currie and Steedman (1990) in their book on wrestling with time: ”It is extremely healthy that more and more economists seem to be acknowledging that substantive progress in economic analysis can only come from confronting the formidable difficulties associated with time”.

It is important to note that a basic trend of modern philosophy is the desire to unite the various branches of science’s understanding of time. The idea of this unification tendency is to unite our daily experience of self and the world with our academic theories of nature and man. In the second half of this century a more general concept of time has been developed and implemented at the interface between physics, chemistry and biology within the framework of the so-called theories of "self-organization". According to the proponents of the new view, this allows it to overcome the old duality between natural and historical time.

Some of the advocates are Ilya Prigogine and Isabelle Stengers.

Chick says in her article “Order out of Chaos in Economics” (1995) that the contribution from Prigogine and Stengers is:

“of vital interest to economists because of the connection of chaos with time. That time only has significance with the introduction of indeterminacy. In deterministic systems time is not essential”.

and that

“The notion of the self-organizing system is a congenial concept to those who see the economy, despite – and even because of – its crisis and transformations, as an evolutionary system with a strong instinct for self-preservation. The “rediscovery of time” which is happening in science is welcome support for those of us who think that the history of the economy, and the history of thought about the economy, have something important to tell us”.

And finally:

"… to wonder at the powerful position occupied in economics by closed, deterministic models … physics moved away from deterministic systems many years ago".

The point of irreversibility, that Chick raises, is a milestone in the effort to bring economic science further with the obvious assistance of science as a significant contribution to take the concept of time seriously.

The recent financial and economic crisis should be an eminent example to demonstrate the need for time consciousness and especially the relationship between money and time, that is, the increasing importance of the financial industry.

As Victoria Chick and Sheila Dow (2013) portrayed it in an article on the present crisis the financial system was in "Keynes's times, tightly controlled and quite well behaved. But today the practice of executive remuneration in the form of stock options has increased the focus on the stock price for investment decisions beyond anything Keynes had portrayed in chapter 12 of the GT. The picture is darker for us now than it was for Keynes".

They subsequently pointed out "the complete disconnection of finance from the real economy and of big business from national and local economies. Predatory capitalism has become the norm, with "bubbles" being created in order to allow those involved in them to gain at the expense of consumers, shareholders and other industries. And some would argue that the financial system has been starving the real economy of funds".

The development of financialization may lead to another conception of temporality. Money are not created on the stock market by realizing a possibility, but simply by selling an idea as an option. An investment loses all its direction and purpose toward accomplishment and fianzialisialised money is bound to a virtual reality. Projects that begin with a tangible vision corrode into pieces of artificial game. It is a shift from a world with realizable dreams to a virtual world, constantly chasing its own tail. Time spent on productive work requires linear time, but the financial sector makes money in terms of timing.

Here impermanence offers the best way to understand the economic changes taking place up to the financial and economic crisis. That's when temporality of work loses its relationship with the temporality of money in the form of burn out.

Thus, the financial economy is on the verge of losing its connection to the rest of the economy. Speculation has now proven to be such a potent force in the currency and equity markets that we would be fools if we ignore this important part of Keynes' analysis. And the General Theory still pertains to an advanced capitalist system.

Economics in real time

For economic science, therefore, it is about how to find a path for economics that moves in and through real time. But also about how human activities can be determined as described by Turk:

“Essentially, the first strand might be likened to determining the right pathway along which economics move, as well as the reasons for the breaks, shifts, and discontinuities that might occur en route, the second might be seen as establishing a historical context or set of conditions within which economic activity takes place. The first may retain elements of parametric time, only now limited as necessarily sequential or ratcheted. The second opens the way to historical description and depiction” (Turk, 2015).

This brings us back to MacTaggart's A and B series, which is a similar way of approaching the issue of what brings an economy through real time. In fact, both types of time concepts are needed for this to succeed, as Subert (2001) states:

”In order to investigate the human world, however, it is necessary to use both types, as human awareness of time contains both the experience of real successions, and the ability to remember, reflect and expect. Serie B (before / after) creates a time structure that refers to relationships and events that are identical for all observers. Conversely, in series A (past, present, future) the definition of today, tomorrow and yesterday change in connection with the observer and the oberserver’s awareness”.

Historical development can be considered as continuous development of ideas, actions and events. Or with a slightly different approach, it can be said that economic activities consist of continuous processes. Both a choice and an action require a course over time and involve both mental and physical experiences that are felt over time. The process of making a choice and implementing a decision is quite complex. It involves subjective as well as objective assessments. It is at this level that the psychic aspects associated with the conceptualization of time in the A-series become relevant.

However, one must be aware that the human consciousness varies from individual to individual both in term of perception and assessment of reality as well as its influence on behavior.

Although McTaggart (1908) ends up giving the A-Series primacy in understanding time, the question still remains as to how the B-Series can be maintained. In my opinion, one can like Turk and Subert take a dualistic approach to time, where both the A and B series are included, as also stated in Atmanspacher and Dalenort (1994): “Mink has realized that the true resolution of the MacTaggart paradox is to recognize that is is necessary to keep hold of both the A-series and the B-series. He saw clearly that the two series reflect two different ways of looking at the world: what he calls the discursive aspect, which throws up our tendency to fix on points, to perceive things in succession, as earlier and later, and hence to construct B -series; and what he calls the transient

aspect, in which we have a sense of a moving series of A-series (which he constructs as a series of vertical past-present-future lines), this series of transient and changing A-series being identifiable as earlier and later than each other, and hence giving the sense of succession that goes with the B-series ".

And how do you handle that? There are two possibilities for connecting the two angles: a strategy can be to internalize the external or alternatively to externalize the internal as inspired from science Atmanspacher and Dalenort (1994):

"… The first of these possibilities might be found in realizing that a vivid and active relationship of man to his "internal world" is required for a humane, future-oriented science. This implies that the way science is practiced on a day-to-day basis has to change accordingly, if our civilization is to keep pace with its enormous amount of theoretical knowledge about the external world. In a broad sense, this is the way of introspection. An option for the second possibility might be the study of toy models, of a virtual reality, transforming Rösslers endo- and exolevels into an empirically domain. The exo-observer is brought down from a superobserver existing in the hidden world of a human observer. The price to be paid is that the endo-world he observes is not real nature but an artificial cyberspace - and the observer's role switches between superobserver and participator".

Rössler's (1992) division into endo- and exo levels must be understood as an attempt to do away with centuries of Western European thinking. An endosystem is a system without an external observer and the exosystem has an external observer. The interesting location for an observer and participant is now where the intersection between the successive and the intentional lies.

What implications does this particular approach in Keynesian economics have for modeling an economy that moves through real time?

Here one has - perhaps as expected - again to look back to Keynes himself. And here it is quite surprising that very little development work has actually taken place, despite the fact that Keynes states a methodology for dealing with both a successive and intentional concept of time at the same time. Even despite the fact that in some economic thinking there is a recognition that uncertainty and expectations play a crucial role in understanding economics. It still fails to include these conditions explicitly in analyzes. That is probably related to the stationary interpretations of Keynes - for example 45-degree or IS-LM interpretations etc. - has been allowed to dominate in both teaching and research for far too long - without the distinction that Keynes actually very explicitly emphasized that, he operated with a different methodology.

In a study, Madsen (2017), of the anatomy of time in Keynes, different assumptions about expectations in the short and long term be established and when this is determined, a multiplier process can be allowed to unfold and determine the total income. However, I would like to draw attention to Chapter 19 of General Theory. This is about how to analyze the consequences of

changes in the monetary wage, Madsen (1986), which can be quite a complicated affair, as it is closely related to the methodology used.

The analysis of a monetary wage reduction in Keynes' changing equilibrium system is considerably more complex than the neoclassical (Pigou) analysis and presented by Keynes as an otherwise incomplete catalog with seven examples of the most obvious reactions to such a change in monetary wages. Central to the analysis is, whether the three fundamental psychological factors remain unaffected by a wage reduction, or alternatively, how extensively they may change and in what direction this affects employment.

Chapter 21 of General Theory, which deals with price theory, also contains considerations regarding the use of shifting equilibria that we “might make out line of division between the theory of stationary equilibrium and the theory of shifting equilibrium - meaning by which changing views about the future are capable of influencing the preset situation. The importance of money essentially flows from it being a link between the present and the future” Keynes (1936) is very explicit here in his point that one thing is to take as a starting point what can be called heroic assumptions that expectations and motives are fixed, which makes it relatively easy to do equilibrium analyzes, but it is a completely different thing to study the real world, where expectations can be disappointed and how it can have a contemporary effect.

The research perspective with a background in Keynesian time perspectives is based on a fusion of the intentional and the successive concept of time. In this way, the story is brought back into the economic analysis. One can imagine that the analytical approach with a horizontal, mechanical movement pattern can raised vertically, where the essential thing is to clarify, the dependent and independent variables and especially to clarify the possible behavioral patterns and expectations that may affect future development. Then a variety of scenarios around economic development can be listed.

Conclusion

Although it is quite difficult to change a fundamental view of reality, McTaggart's dual theory of time contributes to a breakthrough in the method of economic analysis. The content of this approach Keynes is fully aware of and uses it in his analyzes. This has a number of implications for the way analyzes should be performed.

Primarily it contributes to take a position on being within or outside time, where perspective time characterizes the present, while analytical/mechanical time describes consequences. An example could be an interplay between assessment of, in Keynes' sense, for example concrete psychological factors and the mechanical income multiplier.

By extension, we have the endogenous angle that needs to be elaborated, namely the relationship between past, present and future - the A-series. The past is known and yet interpretable, where some historical processes are set in motion by chance. This is described via Path Dependence theory, but it is not complete and provide only a limited input to contemporary assessment, where experience must meet decisions under uncertainty and where at best it is imagination that sets the limit for which scenarios are conceivable.

This also relates to determining what is repetitive, or alternatively, unique behavior - that is, what might be counted and what can be dated or what has recurring nature and what happens more randomly.

An analytical effort solely on the analysis of repetitive events cuts economic analyzes from seeing the economic whole. The same applies to a one-sided registration of infinitely many empirical analyzes, if it is used only for remote observation.

An economist must enter reality and place himself in the intersection of an observer and participant where the intersection between the successive and the intentional lies.

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